March 19, 2010

Darcy L. Endo-Omoto
Vice President
Government & Community Affairs

Dean Nishina
Executive Director
Department of Commerce and Consumer Affairs
Division of Consumer Advocacy
P. O. Box 541
Honolulu, Hawaii 96813

Dear Mr. Nishina:

Subject: Docket No. 2006-0387
MECO 2007 Test Year Rate Case
Preliminary Calibration Factor Annual Report for Year 2009

Enclosed for filing is Maui Electric Company, Limited's ("MECO") preliminary annual calibration factor analysis for year 2009. This preliminary report is being submitted pursuant to Hawaiian Electric Company, Inc.'s ("Hawaiian Electric") letter, dated March 15, 2010, requesting an extension of time, from March 15, 2010 to April 7, 2010, to file the final calibration factor report. As requested by the Consumer Advocate, MECO committed to filing a preliminary report by March 19, 2010. The preliminary report provides the calculated calibration factors by fuel type, comparisons of energy production and run hours by unit or unit type, and a summary of factors that contributed to the differences between modeled and actual values.

Please call Dean Matsuura at 543-4622 if you have any questions regarding the enclosed report.

Sincerely,

Darcy L. Endo-Omoto
Vice President
Government & Community Affairs

Enclosure

cc: Public Utilities Commission

Maui Electric Company, Limited
Preliminary Annual Calibration Factor Report for Year 2009
March 19, 2009

1.0 Introduction

This document provides to the Hawaii Public Utilities Commission ("Commission") and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs ("Consumer Advocate") the preliminary calibration factors for year 2009. This preliminary report is being submitted pursuant to Hawaiian Electric Company, Inc.'s ("Hawaiian Electric") letter, dated March 15, 2010, requesting an extension of time, from March 15, 2010 to April 7, 2010 to file a final report.

As discussed further below, the preliminary calibration factors for year 2009, based on recorded January through December 2009 data, are shown in the following table. Also shown for comparison are the calibration factors for year 2008.

Table 1. Calibration Factors of MECO Power Plants

Plant	2008 Calibration Factor	Preliminary 2009 Calibration Factor
Kahului Power Plant (Industrial Fuel Oil)	1.034	1.027
Maalaea Power Plant (diesel fuel)	1.037	1.046
System	1.036	1.038

2.0 Reasons for Differences in 2009 Modeled and Actual Results

The key contributors to the variance between 2009 modeled and actual results are as described below.

- The unpredictable and fluctuating output of the Kaheawa wind farm. In order to keep supply (generation) and demand (customer load) in balance at all times to keep the system stable, MECO's generating units must counteract the unpredictable increases and decreases in output from the wind farm. When wind farm output decreases, the output of MECO's units must increase by the same amount that the wind farm output decreased. When wind farm output increases, the output of MECO's units must decrease by the same amount that the wind farm output increased. Generating units operate less efficiently when their outputs are constantly changing. They operate more efficiently when their outputs are steady and constant. This variability could not be accurately captured by the model. Because the diesel-fired units (diesel engines and combustion turbines) are the units that regulate frequency, their calibration factor is higher than that of the steam units (Kahului Power Plant).

- The unplanned outage of Maalaea Unit 17 ("M17") OTSG. Due to the outage of the Unit M17's OTSG from January to mid-October in 2009, M17 could not be operated in combined cycle mode. Under normal conditions, M17, Maalaea Unit 18 ("M18"), and Maalaea Unit 19 ("M19) operate as a dual train combined cycle unit. This is one of MECO's most efficient units, and therefore, it is normally one of the first units committed to serve the system load. However, for the majority of 2009, M17 was only able to operate in simple cycle mode while M18 and M19 were operated in combined cycle mode. In simple cycle mode, M17 no longer has the same efficiency compared to combined cycle operation. As a result, during this period, M17 was moved to nearly the end of the unit commitment order sequence and was rarely committed and operated due to its low operating efficiency in simple cycle mode, relative to the other available Maalaea generating units on the system. In place of the commitment of M17 in combined cycle mode, other diesel generators, mainly the Mitsubishi units, were committed. The commitment and de-commitment of the Mitsubishi units (Maalaea Unit 10, Maalaea Unit 11, Maalaea Unit 12, Maalaea Unit 13) are more variable because of their longer startup times. In addition to the Mitsubishi Units, other Maalaea units were operated more frequently than normal in place of the capacity and to serve the system load that is normally provided by M17 in combined cycle mode. These units also have lower operating efficiencies than M17 in combined cycle mode. Operation of these Maalaea units varies due to the limited capacity range and lower normal top load ratings. The larger capacity range of M17 provides more regulating reserve on the system to account for the variability in output of the Kaheawa wind farm. As a result, the varying operation of these Maalaea units in place of M17 cannot be accurately captured by the model.

3.0 Comparison of Modeled versus Actual Key Parameters

A comparison of modeled versus actual key parameters, such as heat rate, energy production and run hours, is provided in Appendix A.

APPENDICES

A. Preliminary Calibration Year 2009 Workpapers

Table A-1

Maui Electric Company, Limited

2009 PRODUCTION SIMULATION CALIBRATION

Kahului				
Actual Net MWH	=	205,283		
Actual MBTU	=	2,968,517		
Actual Net Heat Rate	=	14,461	BTU/kWh	
Simulated Net MWH	=	211,007		
Simulated MBTU	=	2,970,800		
Simulated Net Heat Rate	=	14,079	BTU/kWh	
MSFO Calibration Factor	=	Actual Heat Rate / Simulated Heat Rate		
	=	14,461 /	14,079 =	**1.027**

Maalaea				
Actual Net MWH	=	815,026		
Actual MBTU	=	7,570,026		
Actual Net Heat Rate	=	9,288	BTU/kWh	
Simulated Net MWH	=	809,283		
Simulated MBTU	=	7,184,700		
Simulated Net Heat Rate	=	8,878	BTU/kWh	
Diesel Calibration Factor	=	Actual Heat Rate / Simulated Heat Rate		
	=	9,288 /	8,878 =	**1.046**

TOTAL SYSTEM				
Actual Net MWH	=	1,020,309		
Actual MBTU	=	10,538,543		
Simulated Net MWH	=	1,020,290		
Simulated MBTU	=	10,155,500		
Actual Net Heat Rate	=	10,329	BTU/kWh	
Simulated Net Heat Rate	=	9,954	BTU/kWh	
Proposed Calib. Factor	=	Actual Heat Rate / Simulated Heat Rate		
	=	10,329 /	9,954 =	**1.038**

Table A-2A

Maui Electric Company, Limited

2009 PRODUCTION SIMULATION CALIBRATION

COMPARISON OF PMONTH TO ACTUALS (HEAT RATE)

	KAHULUI			MAALAEA		
	Pmonth 2009	RECORDED	% DIFF	Pmonth 2009	RECORDED	% DIFF
Jan	14.107	13.910	1.39%	8.939	9.346	-4.56%
Feb	14.217	15.075	-6.04%	9.019	9.389	-4.10%
Mar	14.248	14.645	-2.79%	8.952	9.455	-5.62%
Apr	14.141	14.784	-4.54%	8.822	9.281	-5.21%
May	13.871	14.288	-3.01%	8.952	9.407	-5.09%
Jun	13.876	14.253	-2.71%	8.888	9.437	-6.18%
Jul	14.093	14.684	-4.20%	8.878	9.258	-4.28%
Aug	14.106	14.635	-3.75%	8.878	9.216	-3.81%
Sep	13.951	14.404	-3.25%	8.906	9.229	-3.62%
Oct	14.145	14.419	-1.94%	8.803	9.178	-4.26%
Nov	14.127	14.069	0.41%	8.796	9.187	-4.44%
Dec	14.125	14.562	-3.09%	8.761	9.123	-4.14%
Total	14.079	14.461	-2.71%	8.878	9.287	-4.61%

Table A-2B

Maui Electric Company, Limited

2009 PRODUCTION SIMULATION CALIBRATION

COMPARISON OF PMONTH TO ACTUALS

NET ENERGY (MWH)

Unit	2009 PMONTH	2009 ACTUAL	Difference MWH	Difference %	% of Net Gen PMONTH	% of Net Gen ACTUAL	% of Net Gen DIFF
Kahului1	24,409	18,222	6,187	34%	2.03%	1.51%	0.51%
Kahului2	23,495	20,802	2,693	13%	1.95%	1.73%	0.22%
Kahului3	77,380	80,403	-3,023	-4%	6.43%	6.68%	-0.25%
Kahului4	85,723	85,855	-132	0%	7.12%	7.13%	-0.01%
MaalaeaX1	2,157	1,696	461	27%	0.18%	0.14%	0.04%
MaalaeaX2	1,787	1,545	242	16%	0.15%	0.13%	0.02%
Maalaea1	1,340	2,689	-1,349	-50%	0.11%	0.22%	-0.11%
Maalaea2	1,115	2,607	-1,492	-57%	0.09%	0.22%	-0.12%
Maalaea3	857	3,079	-2,222	-72%	0.07%	0.26%	-0.18%
Maalaea4	12,484	13,099	-615	-5%	1.04%	1.09%	-0.05%
Maalaea5	2,852	6,359	-3,507	-55%	0.24%	0.53%	-0.29%
Maalaea6	6,232	8,930	-2,698	-30%	0.52%	0.74%	-0.22%
Maalaea7	78	653	-575	-88%	0.01%	0.05%	-0.05%
Maalaea8	8,863	10,560	-1,697	-16%	0.74%	0.88%	-0.14%
Maalaea9	5,265	6,397	-1,132	-18%	0.44%	0.53%	-0.09%
Maalae10	40,494	37,723	2,771	7%	3.36%	3.13%	0.23%
Maalae11	45,302	48,028	-2,726	-6%	3.76%	3.99%	-0.23%
Maalae12	39,385	36,009	3,376	9%	3.27%	2.99%	0.28%
Maalae13	31,481	39,219	-7,738	-20%	2.62%	3.26%	-0.64%
M141516	385,282	387,198	-1,916	0%	32.02%	32.17%	-0.16%
M171819	224,309	209,235	15,074	7%	18.64%	17.39%	1.25%
HC&S (IPP)	73,465	73,465	0	0%	6.10%	6.10%	0.00%
KWP (IPP)	109,661	109,668	-7	0%	9.11%	9.11%	0.00%
MAKILA HYDRO (IPP)	14	15	-1	-4%	0.00%	0.00%	0.00%
TOTAL	1,203,430	1,203,456	-26	0%	100.00%	100.00%	0.00%

Figure A-1

Maui Electric Company, Limited

COMPARISION OF PMONTH TO ACTUAL NET ENERGY IN GWH

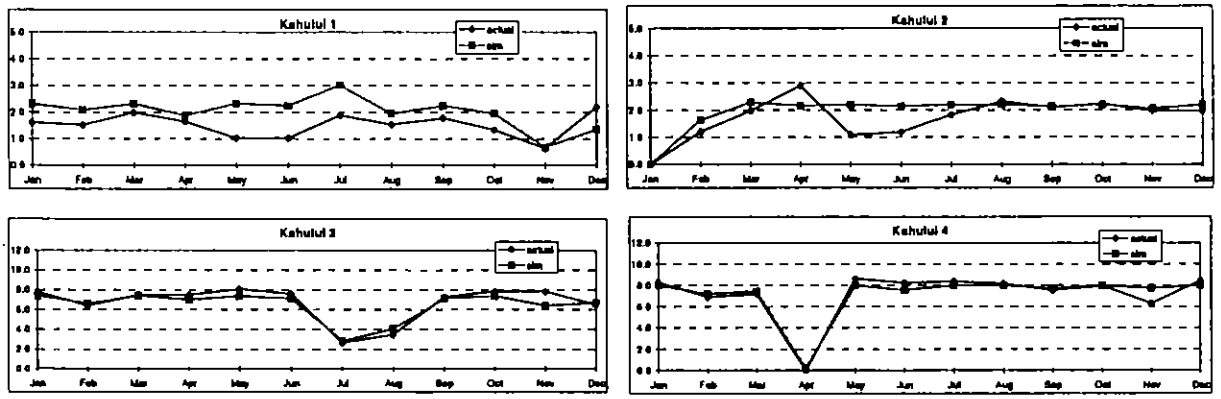

Figure A-1 (continued)

Maui Electric Company, Limited

COMPARISION OF PMONTH TO ACTUAL NET ENERGY IN GWH

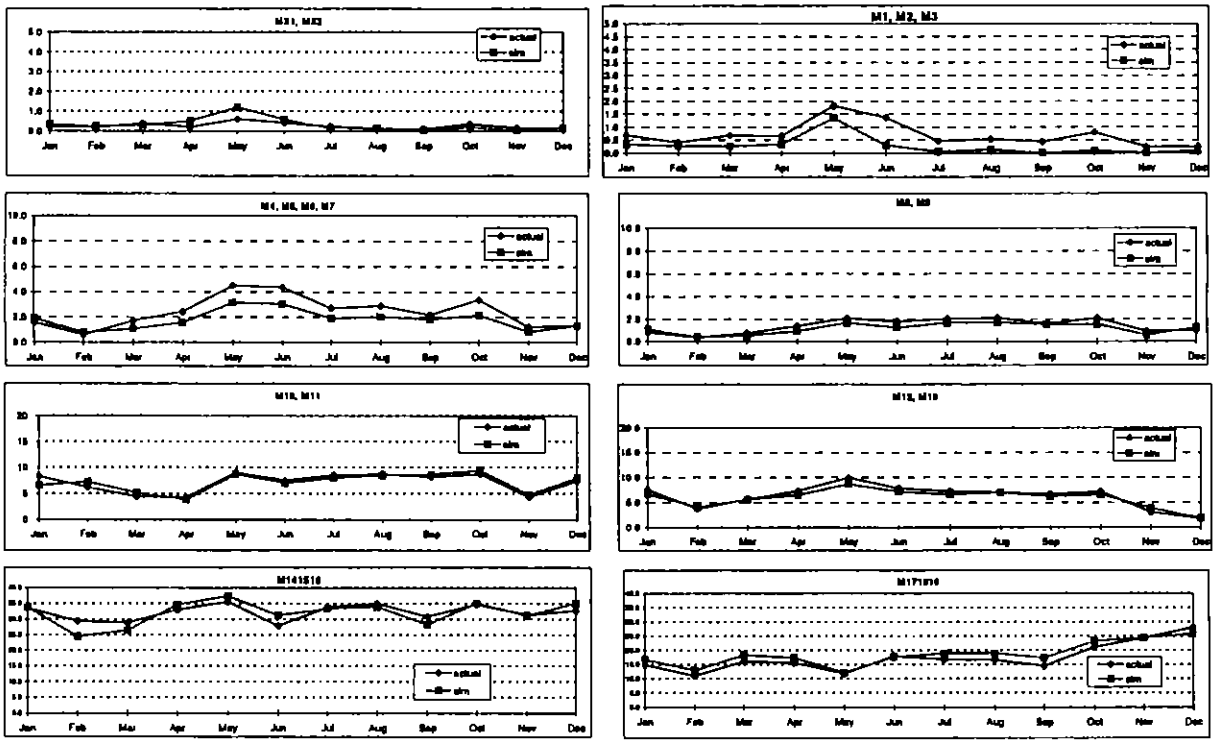

Figure A-2

Maui Electric Company, Limited

COMPARISION OF PMONTH TO ACTUAL RUNTIME IN HOURS

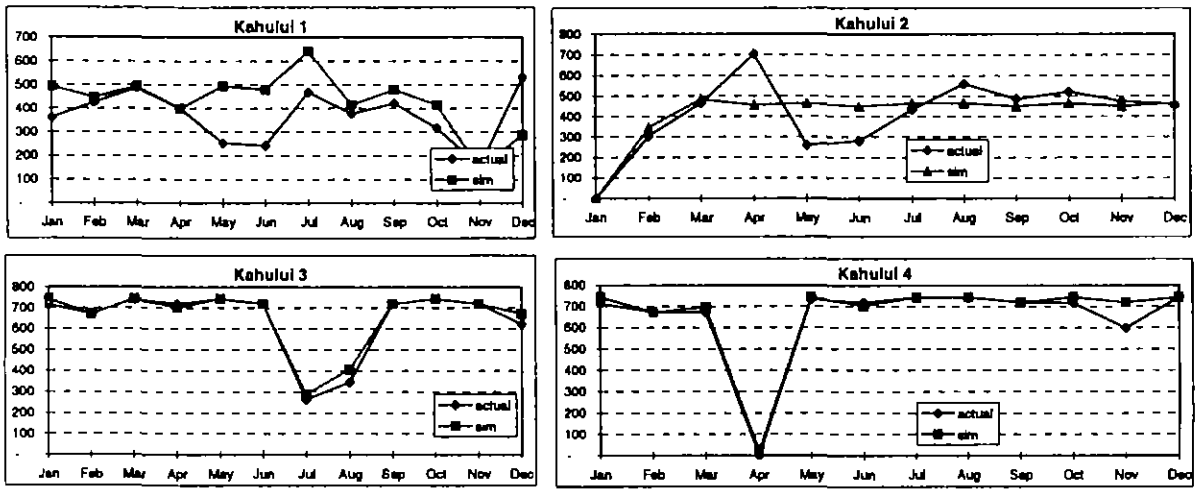

Figure A-2 (continued)

Maui Electric Company, Limited

COMPARISION OF PMONTH TO ACTUAL RUNTIME IN HOURS